

**We claim:**

1. A process for recovering common salt and marine chemicals from brine in integrated manner, comprising the steps of:

- (i) providing calcium chloride of 100-600 g/L concentration for desulphatation of the brine;
- (ii) treating said brine with the calcium chloride to produce granular calcium sulphate through a seeding process;
- (iii) separating calcium sulphate from the brine;
- (iv) evaporating desulphated brine up to 29-32° Be<sup>112</sup>, thereby crystallising out salt;
- (v) washing the salt with water or dilute brine to remove adhering chlorides of calcium and magnesium;
- (vi) evaporating bittern from density range of 29° Be<sup>112</sup> to 35.5° Be<sup>112</sup> to crystallise crude carnallite, and thereafter recovering potassium chloride; <sup>from what? where did it come from?</sup>
- (vii) recovering concentrated end bittern comprising magnesium chloride and enriched bromide; and
- (viii) optionally solidifying a part of the end bittern and calcining in the temperature range of 600-800°C to produce solid magnesium oxide and hydrochloric acid <sup>112 what?</sup> (for preparing calcium chloride for use step (i)). ?

2. The process of claim 1, wherein the calcium chloride comprises distiller waste having a concentration of 5-15% calcium chloride (in <sup>?</sup> 0.8-1.2 mole of calcium to sulphate.

3. The process of claim 1, wherein the desulphated brine is treated with barium chloride <sup>at a</sup> [in] 0.80-0.95 mole ratio of barium to residual sulphate ion prior to evaporating the desulphated brine.

4. The process of claim 1, wherein the recovered marine chemicals are selected from the group consisting of common salt, potassium chloride, magnesium

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chloride enriched with bromide, high purity magnesia, and calcium sulfate with < 0.5% chloride.

5. The process of claim 1, wherein the brine comprises sub-soil or sea brine.

6. The process of claim 1, wherein the brine has a density of 3-24° Be' and a sulfate concentration of 5-18 g/L measured at 16°Be'.

7. The process of claim 1, wherein the brine comprises sub-soil brine having a sodium chloride concentration of up to 18°Be' and sulfate concentration of less than 6 g/L at 16° Be'.

8. The process of claim 1, wherein the sulfate concentration of the brine is reduced to a concentration of 0.5-2.0 g/L.

9. The process of claim 1, wherein the reduction of sulfate is achieved by adding calcium chloride produced *in situ*.  
*NAB*  
*to what?* *112*

10. The process of claim 9, wherein the calcium chloride is obtained from calcination of magnesium chloride of end bittern at 600-800°C with calcerous material comprising limestone, in stoichiometric ratio of one part of limestone with two parts of hydrochloric acid. *?*

11. The process of claim 1, wherein removal of calcium sulfate from desulfated brine is facilitated through a *112* seeding technique which allows granulation of the resultant calcium sulfate formed.

12. The process of claim 1, wherein said brine is located in the vicinity of soda ash plants and is treated with distiller waste containing 5-15% calcium chloride.

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13. The process of claim 1, wherein desulfatation, salt recovery and carnallite production are carried out in solar pans.

14. The process of claim 1, wherein a bromide concentration in the end bittern of up to 7.5 g/L at 35.5°Be<sup>112</sup> is built up during desulfatation without any significant loss of bromide along with crystallized solids during evaporation.

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